

Title (en)

POLYMER ELECTROLYTE MEMBRANE, MEMBRANE ELECTRODE ASSEMBLY AND REDOX FLOW BATTERY

Title (de)

POLYMERELEKTROLYTMEMBRAN, MEMBRANELEKTRODENANORDNUNG UND REDOX-DURCHFLUSSBATTERIE

Title (fr)

MEMBRANE ÉLECTROLYTIQUE POLYMÈRE, ASSEMBLAGE ÉLECTRODE-MEMBRANE ET BATTERIE RÉDOX

Publication

EP 4356460 A1 20240424 (EN)

Application

EP 22755290 A 20220613

Priority

- US 202163210080 P 20210614
- IB 2022055463 W 20220613

Abstract (en)

[origin: WO2022264007A1] There is provided a composite electrolyte membrane for an electrochemical device, comprising at least one reinforced polymer electrolyte membrane having a first surface and an opposing second surface. The reinforced polymer electrolyte membrane comprises a microporous polymer structure and an ion exchange material, in which the ion exchange material is at least partially embedded within the microporous polymer structure to render the microporous polymer structure occlusive. The composite electrolyte membrane further comprises a plurality of porous layers comprising a first porous layer and a second porous layer, in which the first porous layer is adjacent to the first surface of the first reinforced polymer electrolyte and the second porous layer is adjacent to the second surface of the reinforced polymer electrolyte. Also disclosed is a membrane electrode assembly comprising such a composite electrolyte membrane and a redox flow battery, fuel cell, and electrolyzer comprising such a membrane electrode assembly.

IPC 8 full level

H01M 8/0289 (2016.01); **C25B 9/21** (2021.01); **C25B 13/08** (2006.01); **H01M 8/10** (2016.01); **H01M 8/1018** (2016.01); **H01M 8/1039** (2016.01); **H01M 8/1053** (2016.01); **H01M 8/106** (2016.01); **H01M 8/1062** (2016.01); **H01M 8/1067** (2016.01); **H01M 8/18** (2006.01)

CPC (source: EP KR)

C25B 1/04 (2013.01 - EP KR); **C25B 9/23** (2021.01 - EP KR); **C25B 13/02** (2013.01 - EP KR); **C25B 13/08** (2013.01 - EP KR); **H01M 8/0289** (2013.01 - EP KR); **H01M 8/1004** (2013.01 - KR); **H01M 8/1018** (2013.01 - EP KR); **H01M 8/1039** (2013.01 - KR); **H01M 8/1053** (2013.01 - EP KR); **H01M 8/106** (2013.01 - EP KR); **H01M 8/1062** (2013.01 - EP KR); **H01M 8/1067** (2013.01 - EP KR); **H01M 8/188** (2013.01 - EP KR); **H01M 8/1039** (2013.01 - EP); **H01M 2008/1095** (2013.01 - EP KR); **Y02E 60/36** (2013.01 - KR); **Y02E 60/50** (2013.01 - EP KR)

Citation (search report)

See references of WO 2022264007A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022264007 A1 20221222; CA 3220395 A1 20221222; CN 117501486 A 20240202; EP 4356460 A1 20240424; JP 2024524897 A 20240709; KR 20240022549 A 20240220

DOCDB simple family (application)

IB 2022055463 W 20220613; CA 3220395 A 20220613; CN 202280042019 A 20220613; EP 22755290 A 20220613; JP 2023577142 A 20220613; KR 20247000778 A 20220613